

DEC/87

ZX-Appeal

Vancouver Sinclair Users Group

next meeting:

KILLARNEY COMMUNITY CENTRE
6260 KILLARNEY STREET
VANCOUVER

FRIDAY; 7:00PM

DECEMBER 11/87

ZXAppeal is a monthly newsletter put out by the Vancouver Sinclair Users Group. For more information on the group and ZXAppeal see the backcover.

in-idea

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Tis the season...etc. Visions of QLs, and all that. And time for another issue of our monthly missive. Gerd B. sends along a review of the Delta Device, the creation of our own Wilf R. Gerd also gives a plea for fairness concerning the concept of 'shareware'. Ken A., the Prez, has some Kernels, so listen up. Ken also offers a neat program to create piecharts on the 1000. Fred N. drops in with a notice regarding a new BBS feature called the ZX-TERM EXCHANGE. Harvey just made it under the wire with another installment of his 'Playing With...'. Wonder of wonders THREE members have sent in Profiles. That just leaves 56 of you left. Now nothing fancy, just a short piece off the 2040 printer telling when & why you took up with Sinclair machines and what you do with it (them) now. Maybe describe you interests - hardware, software, etc. Participation!

Time for a little reflection. Actually, its been quite a year. Dramatic software developments for the 1000 continue to jump up ie: ZX-TERM*80. Hardware is right behind ie: the DELTA DEVICE. The 2068 saw the emergence of the LARKEN DD Interface as the dominant DOS. Great new and very sophisticated games software came from Britain while very good applications programs came from the programmers on this side of the pond. The new pricing on the QL allows everyone the opportunity to acquire one of the most capable machines yet created. And if you think that's an overstatement then make a point of looking at Frank

Toemay's, of Quantum Computing, demo program. It demos capabilities that put the QL way out in front of all the rest. I'm sure that the coming year has many new wonders waiting for us-so let's go! You all have a cool yule now, y'hear.

BITS & PIECES.....

...check out the advert for the Seiko Data watch. It connects to the serial port of any machine (your extra modem board RS232 upgrade and modem software). The price on this side of the pond is \$48 DOLLARS +\$5.00 s&h from Damark Int'l, Inc., 7714 Brooklyn Blvd, Minneapolis, MN 55443. U.S. ←

...two members, who shall remain nameless, had their machines recently go bye-bye. Luckily for Bill R. and Jay M., Dan Elliot is now offering repair services.

...word was received that a new group is forming in South Dekota - made up of a small group of 1000 owners! We just keep on tickin'.

...another group has joined the Exchange Network. The K.A.T.S. group from Wichita, Kansas, wanted to JOIN our group but their money was returned with a note stating we would be glad to send them our newsletter on an exchange basis.

...the QL has been ordered and tickets for THE QL DRAW II will be available at the meeting. Maybe Harvey will kick in a copy of his incredible Fractal program again this time.

...its renewal time for about 1/3rd of the members so have a good look at your expiry date on the mailing lable and bring your chequebook to the meeting if so indicated.

KERNELS FROM KEN

Our last meeting of Friday the 13th of November, 1987, was attended by approx. 25 members. This was a rather unusual meeting because of the great numbers of hardware and electronics goodies that were sold, auctioned or, in some cases, GIVEN away! Most of the items were donated by Rois Harder, who also very generously donated half of the sale proceeds to our club. He also donated a great pile of ZX magazines to our library. There were a lot of really great bargains which were a great source of amazement and inspiration to all hardware buffs. Can you imagine obtaining a working wide-range pulse generator for \$2? Many thanks, Rois!!!

Also received, with much appreciation, were a number of tape storage racks and ZX magazines from Bob Lussier. Bob has now gone to ATARI-Land. Thanks for the materials, Bob, and thanks for the articles you send every so often.

Thanks also to the members who submitted their member profiles to Rod. I look forward to reading them, and Rod looks forward to receiving more! Just fire up your computer and write a little story telling how you got involved with SINCLAIR computers, and what your computer interests are. Print it out on your 2040 printer and give it to Rod, and you are sure to find other people in the club who share your interests!

One topic discussed at our last meeting was the possibility of a tour of the SKYTRAIN computer system. This has now become a reality and I am now looking for a few more participants. The system has been touted as the most advanced transit computer system in North America, and it would be a shame not to get a first hand account, if we can. Here are the main details:

SKYTRAIN COMPUTER SYSTEMS TOUR

DATE: TUESDAY, DECEMBER 22, 1987
TIME: 1:00 to 3:30 P.M.

The maximum group size is set at 30 people. So far, there are about 15 people who are definitely coming. If you are interested and can DEFINITELY make it on Dec. 22, please call me (evenings) at 438-7740 so that I can place your name on the list. The first 30 who sign up get to go!

Rod has reminded me to remind you that about one-third of our members should be renewing their membership in January! This is quite a large group of people who could give a collective boost to your local Sinclair Club economy. Check your membership expiry date on this newsletter's mailing label, then if your time has come ... give generously. Why risk causing additional newsletter interruptions (the Post Office already does a good job of this).

Finally, on behalf of the executive, I would like to wish everybody a very joyous holiday season and a Happy New Year. The past year has been quite a success, judging from the responses to Rod's great newsletters, our solid (increasing!) membership, our recently established T/S1000 and T/S2068 libraries, and the increased participation, support and help from you, the membership! I am told that we have one of the strongest and finest Sinclair groups still in existence, and this is a tribute to our members and their participation. Let us continue to defy the oft-predicted 'dinosaur extinction' for yet another year! HAPPY NEW YEAR!
9999 STOP
KEN ABRAMSON

MEETING DATE.....

DEC/87						
SUN	HON	TUE	UED	THU	FRI	SAT
?	?	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	?	?

-by your HUMBLE scribe

Vince Lee showed us his 8K NUM system with the static chip in the Sinclair Rampack. All were amazed.

Ken suggested another Soc. study be done on how to avoid the travails of Computer Widowhood. This arose from a note his wife left him in his agenda for the meeting!

Rod Humphreys then stood to tell us we had \$534.72 +/- a few bucks in the olde credit union. He mentioned discretely that it was renewal time folks; that's why the date was circled on your address label, if you're due. Then Rod told us how Bill Peers from Langley had donated his old TS equipment to the club. There had been some thought into just how to dispose of these items (2040 printer, non-functioning TS1000, tapes & books), and it had been decided to raffle it off. Later in the meeting Rod passed around tickets & Rusty Townsend won the goodies. [Between this raffle & Rois Harder's sale later, \$36.00 were added to the coffers.]

To Rod's utter amazement, Hilda McKinnon actually wrote a Member Profile. He then proceeded to berate & badger us to do the same; which we all agreed to do -- eventually.

There was then some discussion of the benchmark program in the last ZXAPPEAL. Look for QL times to be posted soon.

At this point it was time for the 8 Handed Librarians to report. Yes, they are getting to have a lot of stuff to carry around. Ian basically said thanks for the donations & keep em coming. Bill Rutter is up to his eyeballs in uncatalogued Cleveland tapes. He repeats his plea for help with this morass from any interested 2068'ers. Bill then told us that the Cleveland group has alleviated their copying time problems by constructing a 1->6 tapedeck connector & signal booster. Seems like a worthy project for some stalwart hardware sort.

Gerd Breunning told us about some great printer deals he had come across @ Broadway Computer - \$40.00 for an 80 column thermal printer & \$200.00 for a

The meeting opened at 19:15 with 20 present; a couple others straggled in later. Ken the prez, started, angling his foot deftly into his mouth, by thanking those table manners who had manned the tables at the PCFFA swap meet. There was then some talk of the good deals to be had there. Glenn Read told us about the Altair system, with the works, he picked up for \$55.00. Glenn told us a bit about the illustrious history of Altair & MITS in the early days. Mention was made of the fact that it is just 16 years since the first microprocessor, the 4004, was invented by Intel. Ken told us about one company he ran across there (CTRON) who have made a business solely of doing cabling; they claim to be able to make any cable up for you cheaper than you can buy the connectors. Apparently Allied Cable in Richmond makes similar claims.

Ken then mentioned that Fred Nachbaur had been in town that weekend & some people treated Fred to a Chinese supper. El presidente passed around some printouts of RLE encoded pictures Fred had downloaded from Time Exchange in LA. The quality was pretty amazing for ZX81.

At this point, Ken suggested that some intrepid sociological sort undertake a study of TS users automobiles. The thought being that it would be a curious profile of clunkers. I am told that later Ken had to get a boost from Marcio to get his car started.

In his job as a school teacher, Ken had occasion to meet a fellow from BC Transit. He was telling the students about the computer system used for Skytrain [that's hype for Light Rapid Transit, out-of-towners]. It is apparently an extensively fault tolerant system with many layers of redundancy. This is required because the cars have no drivers, using only computer control. Ken was taking names to arrange a tour.

14 cps diablo compatible daisy wheel printer. This reminded Glenn Read of a place called Rider Computer Services (806-12th St. New Westminster) which makes a business of stripping down minicomputer installations - they have 1200 baud modems @ \$-00.40.00

Rod Humphreys then suggested we have another QL raffle -- seeing as they are currently so cheap. A motion was so made & passed unanimously. It will be the same deal as last time - 100 tickets @ \$2.00 a pop.

Harvey showed some Re-Inker documents he had collected from various US manufacturers & invited people to catch him later if they were interested. Harvey also raised the possibility of having a club T-shirt. At this point, Eric Sakara piped up that he had all the equipment required to make said T-shirts & all he needed was some graphic designs. So send in your suggestions.

Eric had also brought a couple of xeroxes of an article on the Z-88 from PICO magazine. During discussion of this it came to light that Chung Chow had used a Z-88 prototype while on an anthropological dig at the U. of Warwick. The article says there will be 1 Meg models by the end of 1987. Skepticism reigned.

Glenn Read then told us that he had finally made up the special Azimuth testing tape. Look for an article from Glenn on the topic.

Rod then started the raffle of Bill Peers stuff & a buying frenzy came over the room as Rois put his goodies up for all & sundry. The meeting was never closed, it was bought out.

>eof

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PLAYING WITH ELECTRICITY

- Nov/87

- Harvey Taylor

When I was in Seattle at the Sinclair Fest, I discovered people had questions about the memory layout of the QL. In particular, the command RESPR was not understood.

The QL memory map has two aspects, what the hardware allows & what QDOS expects. The hardware aspect is straightforward; the 68008 has 20 address lines which define a space of 1 million locations. These are arranged as shown in Table_0.

The memory map as seen by QDOS is independent of the available ram, in relative terms. There are several major sections. These are as shown in Table_1.

When you first power up, the Resident Procedure area and the Transient Program area are empty. As you extend SuperBasic or run jobs these System Variables are changed accordingly. For example, a common operation in a boot program will be something like;

```
100 ADDR = RESPR(1024)
110 Lbytes mdv1_EXTCODE, ADDR
120 CALL ADDR
```

The instruction RESPR(1024) has the effect of lowering SU_RESPR 1024 bytes, if there is memory to spare. This is not unlike the old ZX81 technique of lowering ramtop.

It is easy enough to write a PROCEDURE which reads the System Variables and tells you how the memory allocations of your QL are changing as you use it. The PROCEDURE TELL below does this if you don't want to write your own.

TABLE 0

K	DEC	HEX	USE
1024K	1,048,576	00100000 000FFFFF	Top of Address Space +1
950K	983,040	000F0000	
896K	917,504	000E0000	16 - 16K Peripheral Cards
832K	851,968	000D0000	
768K	786,432	000C0000	
		000BFFFF	
704K	720,896	000B0000	
640K	655,360	000A0000	
576K	589,824	00090000	
512K	524,288	00080000	512K Expansion Ram
448K	458,752	00070000	
384K	393,216	00060000	
320K	327,680	00050000	
256K	262,144	00040000	
		0003FFFF	
192K	196,608	00030000	128K On Board Ram
128K	131,072	00020000	I/O Hardware
64K	65,536	00010000	ROM
0K	0	00000000	

SHAREWARE

PLEASE, please let us keep our creative software writers in bread and butter ! To illustrate my point let me tell you about one software author who still earns his livelihood by writing software for TS1000/ZX81 and PC8300 computers, Mr. Fred Nachbaur. With one stroke of (economically suicidal?) generosity Fred has turned over almost all the software he has written for above mentioned machines to our VSUS library! He has excepted for this only "DUNGEON OF YMIER" and his EPROM for the PC8300. Now for my personal plea (Fred does not know I am doing this and I hope he will forgive me) : if you borrow one of Fred's programs from the library and enjoy it so much that you make a copy for yourself or your friend would you send Fred a cheque for an amount equivalent to the value you place on his program. His address is

C-12, Mtn. Stn. Group Box
Nelson, B.C. V1L 2J3

There are other software writers "out there" and here in our club who have done the same and who deserve the same. If we all contribute, then our software authors will be encouraged to keep writing these beautiful programs for us. Evertime I see memory hungry programs on the IBM's in my employer's office (640K memory is insufficient to run all of the latest version of Microsoft's "WORD") I stand in awe over the ingenuity of our software writers who do so much with so little memory. It takes BRAINS to write concise code.

Thank you for bearing with me - now it is your turn on the soap box.

Gerd Breunling

Table 1

System Variable	Function	
SU_RAMT	-----	Top of Ram
		Resident Procedures
SU_RESPR	-----	Transient Programs
SU_TRNSP	-----	SuperBasic Data & Programs
SU_BASIC	-----	Slave Blocks use this Free memory
SU_FREE	-----	Channel Definition Blocks Device Drivers & Program use of Common Heap.
SU_HEAP	-----	System Variables
SU_BASE	-----	\$20000
		Default Video Ram
RAM_BASE	-----	\$20000

```

100 REMark Print Sys_Var & Mem_Alloc
110 :
120 DEFine PROCEDURE PRT_STATS
130   UR_BASE=131072
140   SU_BASE=163840
150   SU_END =164992
160   SU_CHEAP=SU_BASE+4
170   SU_FREE =SU_BASE+12
180   SU_BASIC=SU_BASE+16
190   SU_TRNSP=SU_BASE+20
200   SU_RESPR=SU_BASE+28
210   SU_RAMTP=SU_BASE+32
220   a=PEEK_L(SU_CHEAP)
230   c=PEEK_L(SU_FREE)
240   d=PEEK_L(SU_BASIC)
250   e=PEEK_L(SU_TRNSP)
260   f=PEEK_L(SU_RESPR)
270   g=PEEK_L(SU_RAMTP)
280   PRINT 'System Variables'
290   PRINT 'SU_RAMTP =';g
300   PRINT 'SU_RESPR =';f
310   PRINT 'SU_TRNSP =';e
320   PRINT 'SU_BASIC =';d
330   PRINT 'SU_FREE =';c
340   PRINT 'SU_CHEAP =';a
350   PRINT 'SU_BASE =';SU_BASE
360   PRINT 'UR_BASE =';UR_BASE
370 END DEFine PRT_STATS
380 :
390 DEFine PROCEDURE TELL
400   PRT_STATS
410   PRINT 'MAJOR SYSTEM MEMORY ALLOCATIONS'
420   PRINT '  TOTAL RAM AVAILABLE:  ';g-UR_BASE
430   PRINT '  RESIDENT PROCEDURE AREA:  ';g-f
440   PRINT '  TRANSIENT PROGRAM AREA:    ';f-e
450   PRINT '  SUPERBASIC AREA:             ';e-d
460   PRINT '  FREE MEMORY AREA:            ';d-c
470   PRINT '  COMMON HEAP AREA:            ';c-SU_END
480   PRINT '  SYSTEM VARIABLES:            ';SU_END-SU_BASE
490   PRINT '  VIDEO RAM:                   ';SU_BASE-UR_BASE
500 END DEFine TELL
510 :

```



```

90 CLS
100 PRINT "PIE CHART TITLE? (32
CHRS MAX.)"
110 INPUT N$
120 PRINT N$
130 PRINT "INPUT NUMBER OF SE
GMENTS:"
140 INPUT C
150 DIM E(C)
160 FOR I=1 TO C
170 CLS
180 PRINT "INPUT VALUE FOR SEGM
ENT ";I;":"
190 INPUT E(I)
200 LET T=T+E(I)
210 NEXT I
220 CLS
230 PRINT AT N0,INT ((32-LEN N$
)/2);N$
240 FOR P=N0 TO 6.3 STEP 0.056
250 PLOT 0+SIN P#R,(R+COS P#R)*
.63
260 NEXT P
265 SLOW
270 IF C<>18 THEN PRINT AT 2,N0
;"SEG";TAB 4;"VAL";TAB 9;"#/#"
280 IF C=18 THEN PRINT AT 1,N0;
"SEG";TAB 4;"VAL";TAB 9;"#/#"
290 FOR I=1 TO C
300 LET Z=E(I)*2*PI/T
310 LET W=Z+W
320 LET M=SIN W
330 LET N=COS W
340 FOR J=N0 TO R
350 PLOT 0+M#J,(R+N#J)*.63
360 NEXT J
370 LET X=PEEK 16441
380 LET Y=PEEK 16442
390 IF I=1 AND X<10 AND Y>12 TH
EN LET X=X+1
400 IF I<>1 AND X<10 AND Y>12 T
HEN LET X=X+3
410 IF X<10 AND Y<12 THEN LET Y
=Y+2
420 IF X>10 AND Y>11 THEN LET Y
=Y-2
430 IF X>10 AND Y<12 THEN LET X
=X-2
440 IF X=1 AND Y=12 THEN LET X=
X+1
450 IF X=10 AND Y=3 THEN LET X=
X-1
460 IF X=9 AND Y=3 THEN LET Y=Y
+1
470 IF X=17 AND (Y=11 OR Y=9) T
HEN LET Y=Y-1
480 IF X=10 AND Y=18 THEN LET X
=X+2
490 IF X=12 AND Y=18 THEN LET Y
=Y-2
500 PRINT AT 24-Y,32-X;I
510 IF C<>18 THEN PRINT AT I+2,
N0;I;TAB 4;E(I);TAB 9;INT (10*(E
(I)*100/T))/10
520 IF C=18 THEN PRINT AT I+1,N
0;I;TAB 4;E(I);TAB 9;INT (10*(E
(I)*100/T))/10
530 NEXT I
540 PRINT TAB 4;"-----";TAB N0;"
SUM ";T
550 STOP
560 SAVE "PIECHAR"
570 RUN

```

MEMBER PROFILE... Jay Mundy

I had always told myself I would never buy a computer. That is until I saw an ad for a certain item in a Popular Science magazine.

Like everyone else, my first computer was a T/S 1000, but perhaps unlike everyone else, I bought mine when they first came out for \$250 (including \$100 16K ram pack... of course!)

Being my first computer, I found it to be well worth every penny. That is until a few months later when A & B Sound was giving them away for \$35 (including \$5 ram pack... of course!) - Nevertheless, I was impressed by the wonderful block graphics and the sharp-looking black case, not to mention the neat keyboard.

Overall, I was amazed at what I could do with this little gem. I had it hooked up to a slightly defective 12" black + white TV which I was able to obtain for no money down, no money later from a local TV repair shop.

Not long after this, I learned of our club meetings which were then being held at VVI. After attending a few (very crowded) meetings I came to the conclusion that in order to understand anything that was being said you needed to have an engineering degree in electronics, so I decided not to go back until I knew one end of a resistor from the other.

Having completed my first term at BCIT (and finding out that it makes no difference which way you hook up a resistor), I felt I was ready to take another crack at it.

By this time I had acquired much programming experience in BASIC on a used 2068 I had picked up out of the BUY & SELL and after rummaging through my papers, making a few phone calls, and driving half way across the province, I found myself face to face with Rod Humphreys.

He was more than willing to bring me up to date on the club, show me his impressive computer system [collection?!?] and relieve me of a \$15 membership fee.

Having been a member for almost a year now I find the meetings more interesting (and much less crowded) than back at VVI. However, I was surprised at the number of people who are still using the 1000. But on the other hand, I suppose the people with QLS feel the same way about me.

My main computer applications run towards games and entertainment along with learning advanced programming techniques in BASIC and a little assembly language and machine code. I also like to experiment with interfacing projects and am currently working on designing an interface which will allow me to connect an analog joystick to the 2068. This I plan to use for creating computer graphics.

As a point of interest, the other day, while experimenting with the rear edge connector of my 2068, I managed to fry something inside the computer.

I have sent it to Dan Elliot of Missouri for repairs (his ad appeared in the November newsletter) and with any luck I should be receiving a diagnosis from him soon.

So, until then I guess I'll have to go back to using my 1000. Now if I can just remember which door it's holding open...

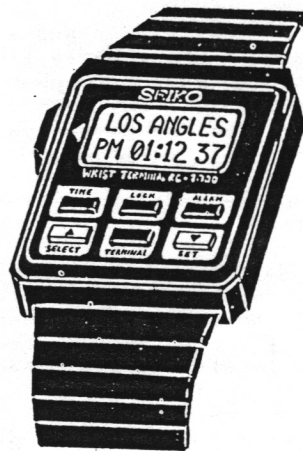
This is an example of RLE Graphics but with a difference -- it's from a ZX81 using Fred's ZX-TERM*80 and Hi-Res!!



DATA-SKIP

presents

★ SEIKO RC-1000 Wrist Terminal



JOE BROWN
213-123-4567

Memo Function. Can be used to store telephone numbers, client lists, schedules input from a personal computer. There's no limit to its uses. Data entries have a maximum length of 24 characters, and can be output on the watch display whenever, wherever you wish. The Memo function is the heart of the Wrist Terminal.

MEETING 335
10/15 A10:30

Schedule Alarm Function. Input the month, day, hour, and minute, for schedule entries and your Wrist Terminal alert you when the date and time come by beeping and displaying a twelve character message on the screen. Invaluable for the businessman, of course, but the Wrist Terminal can also remind you of special personal days, for example, birthdays or anniversaries, that are so embarrassing to forget.

DANCE LESSON
5 FRI P06:00

Weekly Alarm Function. Tuesdays at 9.30 there's a meeting. Thursdays at 7.00 you go to your sports club. Fridays... The Weekly Alarm Function is just the thing for today's busy people. Input the day of the week, hour, and minute and each week at the proper time the Wrist Terminal will beep and display a twelve character message to remind you.

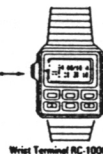
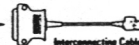
FRANKFURT
AM 02:08 42

World Time Function. What time is it now in London? New York? Just input the time difference and afterwards you can know the time anywhere in the world, instantly, with this internationally oriented function. Be sure to input the place name, too, in up to twelve characters.

// 84 10/14 A
SUN 10:08 42

Watch Function. The Wrist Terminal has a full set of Time Keeping functions, including a built-in alarm which will beep at the same time each day and a calendar which will automatically tell you the year, month, and day accurately from now until the year 2020. It has an hourly time signal, too.

£49.95



The Seiko RC-1000 is a wrist-terminal with 2K of free memory to store addresses, telephone numbers etc. (max. 80). Also has extensive alarm-facilities. Fully programmable on your Spectrum or QL Data-transmission via Ser-1 port or Interface I. Complete package (containing Transmission Software, interconnecting-cable and Watch)

Now only

~~£49.95~~
48.00 US
- SEE PAGE 2

★ VIDEOFACE Digitiser



With the Videoface you can transfer television pictures into Spectrum SCREENS. With this SCREENS you can do whatever you like. You can LOAD them into a drawing program or make hardcopies on a printer (see examples). For the Videoface a video-out signal needed so you can use a video recorder, camera or scart-television. You can even use another computer as a transmitter. What would you think of a Commodore screen in your Spec?? The Videoface scans continuously and because of it's speed, it appears you're watching a digitised movie!

The Videoface produces a high-res 256 x 192 x 4 bit screen. The software is fully menu-driven and is Beta and microdrive-compatible. Slice adjustable while scanning. Always stores the latest six screens for animations! The Videoface digitises a picture in 0.27 seconds! And you can use it for fun, computer art or professional aims. So why hesitate? Rush to the mailbox and order now! The Data-Skip Videoface digitiser is

£69.00

Send a cheque or postal order made payable to: Data-Skip Holland

Data-Skip, Ooshaven 58, 2801 PE Gouda, Holland

Tel: 1820 20581

Videoface and RC-1000 also available from:

Romantic Robot (U.K.) — Micro-connection (Belgium) — ABC-Electronic (W. Germany).

I am privileged to be a proud owner of a TS1000. Its simple design allow room for the experimenter and the adventurous. There is a sense of accomplishment when a hardware modification is successful.

The computer and the Rampack have been removed from its cases and mounted onto a large wooden base. The Rampack is hard wired into the computer to eliminate crashes due to "rampack wobble". A full size keyboard has been added to allow touch typing and the 8K NVM was added to allow the 8-16K region to be used as a Randisk.

The TI keyboard was stripped down and the metal frame was spray painted to prevent rusting. The spring under the space bar was removed to give it a softer touch. The Alpha Lock key now serves as the Write Protect switch for the NVM and the Ctrl and Fctn keys act together as the Reset switch for the computer.

For extra protection there is a surge protector on the AC line. The 9 volt from the adaptor is filtered through some capacitors to provide a cleaner DC supply. This helps to prevent crashes due to glitches.

The ULA always seems to be the first chip to go in the computer. That's not surprising due to the amount of heat that it generates. 40 pin IC heatsinks are available through various electronic distributors. Both the ULA and the Z80 CPU chips are now protected. The 5 volt regulator heatsink is inadequate and can be made larger by utilizing some Alco fasteners.

I have two projects that I will be working on in the future; One would be hooking up a full size numeric keypad with full arithmetic functions and the second one would be hooking up the sound generator IC, AY-3-8910 so that it will be able to make the same sounds like its cousin the TS2068.

More POKES

Having been a ZX-81 computer enthusiast for a few years now, I have picked up many bits and bobs which have helped me on my journey through BASIC. I have compiled a list of some of these bits and bobs into the following list:

RAND USR 836

This is a loading function which loads your program and automatically breaks into it. To use the function, type in FAST and then RAND USR 836.

USR 3086

This function scrolls the screen and prints something at the same time. To use it in your program, type in PRINT TAB USR 3086:"whatever the message is" or if you want to want it 5 spaces from the beginning of the line, PRINT TAB USR 836 +5:"whatever the message is".

POKE 16389,68

If you have got a RAM-pack connected, and you wish to go into 1K Mode without disconnecting the RAM-pack, then you can lower RAM-TOP to 1K by typing in POKE 16389,68 and then NEW.

POKE 16389,128

If you are in 1K Mode, and you would like to get back to 16K Mode without losing your program, type in FAST and then POKE 16389,128. Now type in LIST and WAIT.

RAND USR 0

This function clears all memory including whatever is above RAMTOP. It is also a quick way of restoring RAMTOP to normal if you have lowered it.

POKE 16419,x

This function will LIST any line from 0 to 255. Just LIST the line that you want to view from (e.g. :LINE 17) and then type in POKE 16419,x where x is the line which you have just LISTed.

POKE 16418,0

This function will allow the use of the bottom two lines of the screen. Use the statement with a program, as it will not work after the program has been broken into or if it is not a program line or after the program has stopped. Do not INPUT or SCROLL in this mode, as the machine will crash. To get back into normal mode, type in: POKE 16418,2.

POKE 16510,0

If you have a machine code routine at line 1, and you do not wish it to be accidentally edited, type in POKE 16510,0 and line 1 will change to line 0. This line cannot be edited. If you want it changed back to line 1 again, type in: POKE 16510,1.

MEMBER PROFILE

HILDA MCKINNON

SO WHY SHOULD THIS LITTLE OLD
LADY JOIN U.S.U.G.?

ANXIOUS TO FIND SOMEONE TO
REPAIR HER TIMEX SINCLAIR
SHE INQUIRED AT THE COMMODORE
USERS GROUP AND WAS REFERRED
TO R.L.HUMPHREYS OF U.S.U.G.
SHE ARRIVED AT HER FIRST
MEETING COMPUTER IN HAND
----PROBLEM SOLVED

SHE FEELS VERY HUMBLE
LISTENING TO THIS AUGUST
ASSEMBLY OF TECHNICIANS
AND PROGRAMMERS

NOTHING LIKE LEARNING FROM
EXPERTS.

AS PERHAPS YOU HAVE GUESSED
SHE IS A RETIRED SCHOOL TEACHER.
SHE STARTED IN A ONE ROOM
LOG SCHOOL AND FINISHED AS
A VISITING LECTURER AT U.B.C.
TEACHING MATH.ED.

INITIAL INTEREST IN COMPUTERS
BEGAN AS A MEMBER OF THE
MATHEMATICS CURRICULUM COMMITTEE
THAT FIRST INTRODUCED BASES
OTHER THAN TEN AND FLO CHARTS
TO ELEMENTARY CURRICULUM.

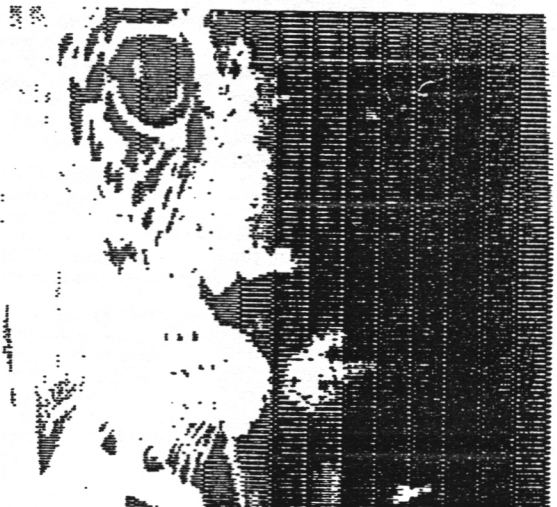
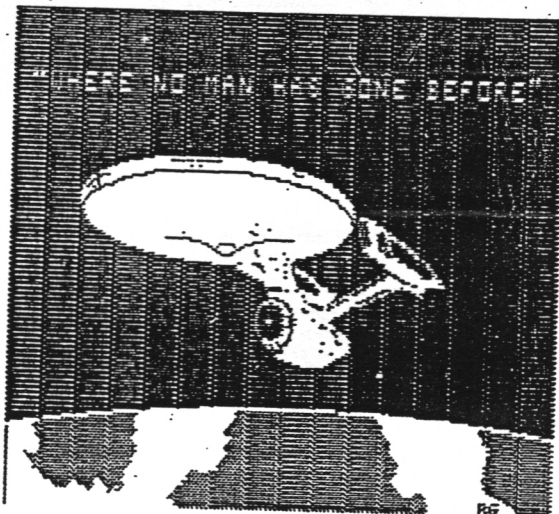
SHE IS STILL USING THE T.S.1000
PURCHASED IN 1983 AT A K-MART
IN SANTA ROSA. IT WAS ON SALE
FOR \$19.99.

HER T.S.1000 IS SOMETIMES
USED AS A TOOL BUT OFTEN JUST
FOR FUN.

THIS USER IS STILL FINDING
ENJOYMENT IN CHANGING VARIABLES
OR ADDING TO OR SUBTRACTING
FROM A GIVEN PROGRAM.

H.MCK.

More examples of RLE Graphics on the ZX81



Since ZX-TERM*80 propels us into the electronic information age, it only makes sense that after-sale support should be via the electronic medium. With this in mind, I have arranged to obtain disk space on the "Nicolson Nighttime Network." Phone (604) 354-4666. At this writing, the board has an article I uploaded into the files section, detailing how to import files from Memotext V3 into ZX-TERM*80. You can now upload files created with Memotext, completely translated and formatted; in other words, just as it would look if printed to paper. Other similar articles and "helpful hints" are in the works.

At this point, the project is still experimental. By that I mean, if we don't get sufficient interest in the form of calls, I will discontinue the effort. The sysop of the board was kind enough to allow space for ZX-related files, but was quite dubious that enough people would bother calling. Let's prove him wrong.

If it proves popular, I plan on uploading public domain Sinclair programs (some of them never-before-seen! Including high res!). However, it depends entirely on you.

Any files that exist on what I'll informally call "The ZX-TERM Exchange" are in the public domain, and may be uploaded to other boards or services at your discretion. To avoid the trouble of having to set up a separate SIG for Sinclair/Timex ZX/TS users, I have decided that all file names will start with "ZX". This way, all the ZX stuff will be right at the end of the catalog of available files, out of everyone else's way, and yet all in one group for ZX aficionados. If you upload anything to the NNN, please follow this convention. (.DOC or .RLE files of general interest not included, of course). In addition, let's standardize to the following suffixes:

ZX----.DOC - ASCII document files readable by any computer
 ZX----.MTX - Memotext files (readable only by ZX/TS users).
 ZX----.PGM - ZX/TS1000 programs
 ZX----.VAR - Variables associated with a given program.

Note that the name given to program and variables sets should be the same, so that it's obvious that the two go together. Similarly, if there is documentation for the program, use the same name followed by .DOC. Preferably, upload the elements in this sequence: .DOC, .PGM., .VAR (if needed).

For years now, ZX/TS users have been clamoring for support, and rightly so. Here is a golden opportunity to get those questions answered (hopefully, anyway) for free, gain access to free programs, and get what is in essence a free newsletter for ZX-TERM*80. Use the opportunity. All it will cost you is a phone call; and if you call late at night or on Sunday, it will only cost you a few dollars for a half-hour online, regardless of where you are.

The NNN runs at 8 bits, no parity, 1 stop (standard for Xmodem and ZX-TERM*80), and allows Xmodem up/downloading. It operates from 00-0900 every night Monday-Saturday, and all day Sunday. When you log on, THANK THE SYSOP for the courtesy of letting us humble-yet-cheap ZX fanciers use his board for our own special-interest purpose.

Fred Nachbaur

PS - When you first log on to the NNN, go to the Information section from the main menu, and select "ZX-TERM EXCHANGE" for an introductory letter outlining our goals, etc. Have your SAVE TOGGLE on, as it's quite long.

Reprinted from the Jan-Feb/87
issue of the S.L.U.G. newsletter

SELECTIVE SCREEN\$ LINE COPY
by Martin DeBoniface

In the Winter-85 issue of Quarters Bill Johnson enlightened us with a TS2068 program to COPY a screen without using the COPY command. The advantage being selected lines could be specified to COPY instead of the entire screen. His program used the SCREEN\$ function as the heart of the routine.

Although it worked, the SCREEN\$ function has some disadvantages. Most notably it cannot print user defined graphics (UDG's). Both user defined and Sinclair UDG's are not recognized by the SCREEN\$ function. Which led Mr. Johnson to propose his readers to submit various programs that would determine printable SCREEN\$ characters. Below is a short subroutine which takes care of everything.

This program selectively COPYs each and every speck you care to PLOT, line by line. Any number of lines may be COPYed from the screen to the printer. I call it:

"Selective SCREEN\$ Line Copy"

The heart of the program utilizes the POINT function for precise pixel identification. Rather than use a bit mapped transfer algorithm I chose four nested loops. Sinclair's screen layout is rather tedious and an understanding of the bit transfer technique is easier to grasp using four nested loops.

Line 130. The outer most loop controls which lines we want sent to the printer.

Line 140. This loop sends a 32 character line, as selected by the outer most loop, to the printer.

Line 160. This loop controls which of the eight pixel rows within a given character will be equivalenced to a decimal number.

Line 180. The inner most loop takes a row of eight pixels, within a

character, and calculates the equivalent decimal value. This decimal number is then POKed into UDG A.

Line 210. UDG A is transferred to variable a\$ to be LPRINTed in line 220.

The only complaint which a user might have with this subroutine is its speed of execution. For each specific line you want COPYed from the screen to the printer a delay of 48 seconds is in order. This is caused by the fact that the printer cannot LPRINT one character at a time. Consequently it must LPRINT an entire line at a time. In turn this can only be done if the printer buffer is full. Hence, the delay.

```
30 REM Test Routine
40 CLS
50 FOR i=97 TO 118
60 FOR j=BIN TO 31
70 PRINT CHR$ i;
80 NEXT j: NEXT i
90 GO SUB 100: STOP
100 REM Selective COPY Routine
110 INPUT AT 0,0;"Enter First L
INE TO COPY ";first;"Enter Last
LINE TO COPY ";last
120 IF first<0 OR last >21 THEN
RUN 100
130 FOR v=first TO last
140 FOR h=BIN TO 255 STEP 8
150 LET top=175-(v * 8)
160 FOR r=top TO top-7 STEP -1
170 LET b=BIN
180 FOR c=h TO h-7
190 LET b=b* 2+(POINT (c,r)<>0)
200 NEXT c: POKE USR "b"+top-r,
b
210 NEXT r: LET a$="b"
220 LPRINT a$;
230 NEXT h
240 NEXT v
250 RETURN
```

EDITOR'S NOTE: Enter RUN and the screen will fill up with the letters 'a' to 'v'. To use the Selective COPY routine use GOTO 100. Lines 100 to 250 can be placed in any program.

Beep, beep

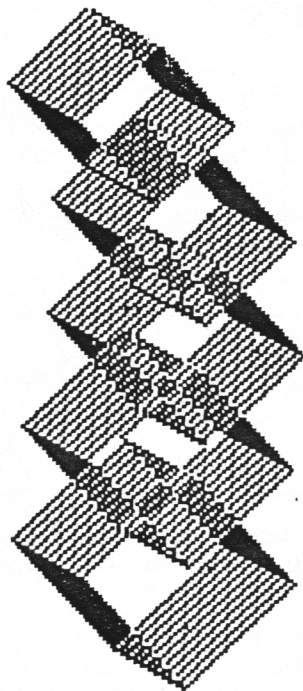
Dear INTERFACE,

One cannot really complain of the limitations of the ZX81 computer at such a snip of a price, but one drawback seems to be the keyboard. This is a layered plastic and metal film composition which is sensitive to small pressure of the finger, and the only real way of knowing if you have pressed the key in the right place, or with sufficient pressure is to constantly look up at the TV screen.

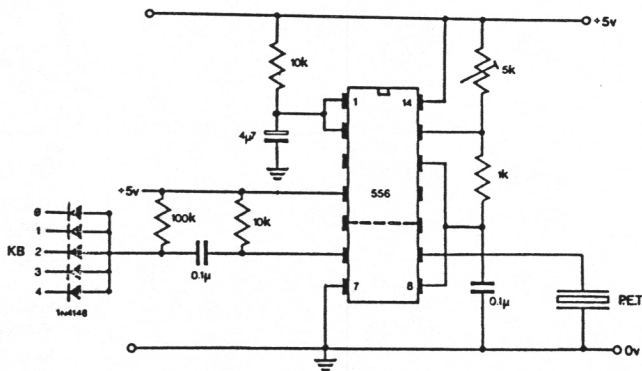
The circuit shown causes an audible 'beep' every time a key is successfully pressed, thus alleviating neckache.

The circuit is small enough to fit inside the case of the ZX81 just underneath the keyboard and is powered from the computers 5V rail. The addition of this circuit in no way interferes with any of the operations of the ZX81.

A commercial version of this idea is on the market and costs over £10. The circuit described should cost no more than about £1.50.



Circuit Description

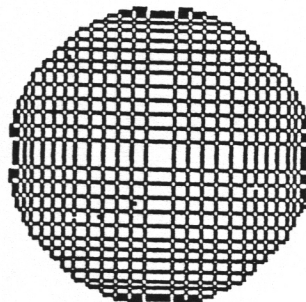


© P. C. C. C. C.

The circuit is based on the 556 dual timer chip with one of the timers being used in a monostable mode of approx 50ms and the other being used as an astable to drive the piezo electric transducer. The circuit may be trimmed to obtain the resonant frequency of the transducer.

DEC 1987 MOON CALENDAR ①

TUE	1 ○	8 ○	15 (22)	29 ○
WED	2 ○	9 ○	16 (23)	30 ○
THU	3 ○	10 ○	17 (24)	31 ○
FRI	4 ○	11 ○	18 (25)	
SAT	5 ○	12 (19 (26)	
SUN	6 ○	13 (20)	27 (
MON	7 ○	14 (21)	28 (



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VSUG

The Vancouver Sinclair Users Group has been in existence since 1982. We are a support group for the owners and users of all SINCLAIR and TIMEX computers.

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V/Pres:- 'Rusty' Townsend

Sec:- Harvey Taylor

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